



Fire Program Analysis – Preparedness Module Preproduction Delays

Topic: Preproduction Delays

Issue: Reliable outputs from FPA-PM require a standard process to provide appropriate input values to the system. The system calculation to determine resource arrival time is important to determining the start of production and eventual fire event containment.

Background: Instruction and training on arrival time has focused on two elements the travel time and get-away delay. Our observations of system performance and discussions with the field indicate that better definition of the process to develop arrival time is needed.

The process to calculate the travel time is unchanged. Training materials on this subject are still valid. Arrival at the modeled fire event is influenced by the capability of the fire resource and the physical characteristic of the Fire Management Unit. New definitions to clarify how the arrival time is developed are discussed in this paper.

Definitions:

Pre-production delay: *The accumulated time delays that apply to fire resources prior to the start of fire line production. This is the sum of all delays from report of the fire until production can begin on the fire, and includes dispatch decision delay, resource response delay, travel time, set-up delay, and walk in delay. See Figure 1 below.*

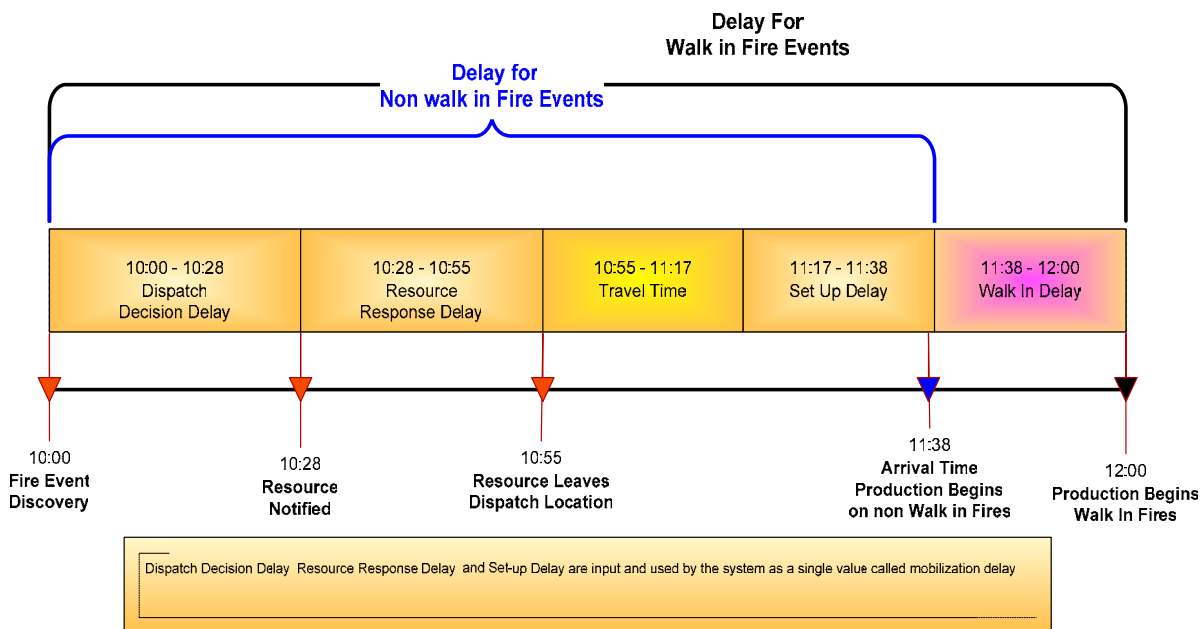


Figure 1: Preproduction Delay Timeline

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Relates to PCR 101.

For more information, see the FPA web site fpa.nifc.gov

Dispatch Decision Delay: *The time from fire event discovery through notification to respond being given to fire resources. This includes time for decision process. It is part of the summation to calculate preproduction delay.*

Resource Response Delay: *This is the time from notification for fire resources to respond to the fire event until the fire resources leaves the dispatch location.*

Travel Time: *The enroute time between the dispatch location and the workload point without delays. The travel time is calculated from distance between dispatch location and FMU based on particular KCT of fire resource. $[(\text{distance DL to WP})/(\text{travel speed for the fire resource}) = \text{travel time.}]$*

Set-up Delay: *The time period from the end of calculated travel time until fire resources are ready to produce or begin walk-in. Examples: Time to unload dozer from lowboy and size up fire; time to size up landing spot, land, and unload a helicopter.*

Mobilization Delay: *The FPA application treats the Dispatch Decision Delay, Resource Response Delay, and Set-up Delay as a single value for each K/C/T.*

Walk In Delay: *The typical time period, at the conclusion of set-up delay, for fire resources to travel cross-country to fires in walk-in Fire Management Units. The walk-in delay should be developed by the fire planning team to a general or typical fire location.*

Points to Remember:

The walk in delay applies to those FMUs that have identified a percentage of the FMU workload as walk in fire events. If there is no walk in fire workload defined then production begins at the conclusion of the set up delay. An exception is that walk in delay is always applied to smokejumper and fire boat resources.

Dispatch decision delay, resource response delay, and set-up delay will be standard values determined by subject matter experts, and input to the system through lookup data by Kind and Category of fire resource. See mobilization delay above. [Helicopter delays may be different from engines which could be different from dozers.]

The model has been enhanced to allow the Fire Planning Unit to input walk in delay specific for each Fire Management Unit. Walk in delays for Smokejumpers, Helitack, Engines/Handcrews/Boats, and Dozer/Tractor Plow resources can be developed by the FPU to each FMU and input to the system under the FMU Tab. A separate White Paper discusses Smokejumper deployment and associated delays.

The method or rationale for developing the walk in delay should be documented.